United States Department of the Interior
Bureau of Land Management

Winnemucca Field Office August 2006

Little Owyhee Roads Herbicide Treatment
Environmental Assessment
NV-020-06-EA-18

This photo is of the Winters fire which burned in July and August of 2006. This fire burned over 200,000 acres in a matter of days. The Winters fire burned only a small portion of the Little Owyhee Allotment, however this fire provides a staggering picture of what the possibilities of fire on the Little Owyhee could be (photo courtesy of Suwyn Type 2 Incident Management Team).

Winnemucca Field Office
Bureau of Land Management
5100 East Winnemucca Boulevard
Winnemucca NV 89445

Table of Contents

Little Owyhee Roads Herbicide Treatment
Environmental Assessment
EA# NV-020-06-18
Winnemucca Field Office

1.0 INTRODUCTION

1.1 Purpose and Need

The Bureau of Land Management (BLM), Winnemucca Field Office is proposing to decrease big sagebrush along roadsides in the Little Owyhee Allotment for fuels reduction and fire suppression purposes. The Little Owyhee Allotment contains some of the largest, most continuous sagebrush stands on the Winnemucca District. Fire has been aggressively suppressed within these allotments for over 30 years which has allowed the sagebrush to grow to large heights and the stands to become even-aged, with few naturally occurring mosaics remaining. This nearly continuous stand of vegetation would allow large wildfires to burn unchecked across nearly the entire area allowing it to destroy entire existing sagebrush stands, which in turn would destroy valuable wildlife habitat found in the area. By treating the sagebrush along the edges of the roads the BLM hopes to reduce the chance that a wildfire could spread uncontrolled and grow to catastrophic size. Treating the edges of the road will break up fuel continuity and reduce overall fuel loading in specific areas creating breaks within the vegetation that will slow or stop an advancing wildfire. Specific areas have been broken up into blocks or compartments using the existing road system (see 2.1 Proposed Areas) so that in the event of a wildfire it (the fire) will be contained within that block or compartment instead of burning unchecked across the entire area.

1.2 Land Use Conformance Statement

The proposed action and alternatives described are in conformance with the Paradise-Denio Management Framework Plan (MFP), issued July 1982. Although not specifically addressed, fuels treatments conform to wildlife, range, and watershed objectives (WLA 1.12, RM2.1), which includes improving and maintaining habitat quantity, quality, diversity, and production by artificial methods when appropriate.

1.3 Relationship to Laws, Regulations, and other Plans

This Environmental Assessment is tiered to the Vegetation Treatment on BLM Lands in Thirteen Western States Program EIS for Fiscal Year 1991. The Sage-grouse Conservation Plan (Santa Rosa and Desert Sage-grouse Population Management Unit Plans), Final Multiple Use Decision (Little Owyhee Allotment), and the Winnemucca Fire Management Plan also support these actions.

The proposed actions and alternatives described are consistent with state and local laws, regulations and plans to the maximum extent allowable under federal law.

1.4 Potential Issues

An interested party letter was sent out in January of 2006 informing known interested parties that the BLM was proposing to implement a variety of fuels treatment projects on the Little Owyhee Allotment. The interest letter was also written into an information bulletin that was broadcast on radio stations in the area and sent to the Humboldt Sun (local newspaper). Comments, ideas, questions, and issues with the proposed project were requested. Several comments were received from various state and federal agencies and several others from interested public parties. There were some general concerns about the size and scope of the proposed project as well as the lack of identified specific treatment sites in the interest announcement. Another concern was the treatment types and their application on sagebrush habitat on such a large scale. There was also concern about wildlife on the proposed project areas as any treatments involving sagebrush vegetation will impact species dependant on such vegetation, such as pygmy rabbit, sage-grouse, Brewer's sparrow, sage thrasher to name a few. The major issues identified by scoping are found below:

- Sage-grouse, Pygmy Rabbits and other Special Status Species
- Cheatgrass and Noxious Weed Invasion
- Habitat Loss/Sagebrush Conversion

Due to some of the issues identified in the scoping process the original project was scaled down into the Little Owyhee Roads Herbicide Treatment (EA# NV-20-06-18). The project was made as site and treatment specific as possible in an effort to better address public concerns and issues.

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Areas

Little Owyhee Allotment (Appendix I)

2.2 Proposed Actions

The Winnemucca Field Office is proposing to improve the current "fuelbreak" system which is created by existing roads that cross the allotment. The WFO proposes to treat up to 1,569 acres of roadside vegetation to expand the existing fuelbreaks created by the roads. The treatment will extend on each side of the selected roads 20-30 feet out on both sides for a total of 60+ feet across the roadbed. The herbicide (BLM Approved) tebuthiuron (Trade Name: *Spike*) will be used to reduce the amount of sagebrush along the roadsides by approximately 50 to 75 percent to create a wider and more efficient fuelbreak by reducing living sagebrush vegetation. Generally for the Wyoming big sagebrush plant communities, basal and crown cover is 20 to 40 percent. The crown cover for the Wyoming big sagebrush communities would be reduced 15 to 30 percent overall. Tebuthiuron specifically targets the brush species while minimally affecting grasses and forbs in the treated areas. The chemical (tebuthiuron) moves through the soil and into sagebrush roots; it moves up into the plant and will completely kill the plant within 2-3 years (Specimen Label for Spike 20P, 2003). Treated areas will be specific to areas where the sagebrush is in a late or mid-seral stage (see attached maps).

Treatment areas would stop one-hundred feet away from any existing open water sources (creek, cattle trough, lakes, and ponds) and from areas of exposed bedrock. Likewise, all other label specific requirements will be adhered to, including the avoidance of areas where groundwater is expected at five feet or less below ground surface (bgs). These untreated areas would be left as is; there would be no mechanical, hand, or other treatments in these areas.

The proposed herbicide, tebuthiuron, is available in small pellets so drift of the chemical off of the proposed treatment area would be limited. Time of application would be August through October, with preference for the majority of the treatment occurring in September. Time of treatment depends on budgeting as well as the fact that the chemical should be applied before heavy fall and winter precipitation occurs.

A licensed applicator would apply the herbicide with either a fixed wing aircraft or a helicopter using standard-approved aerial application techniques. BLM will provide a GIS map and coordinates as to the specific locations where the chemical will be applied.

The Winnemucca Field Office is proposing to implement small scale disturbances on a landscape level in an effort to reverse the effects of thirty years or more of fire suppression. The WFO goal is to mimic the natural mosaic processes (lightning and wildfire) by using chemical treatments to create breaks in vegetation. By mimicking the natural process of wildfire the WFO hopes to protect the existing remaining natural plant communities, improve watershed and rangeland conditions, and increase and preserve the quality of all wildlife habitat.

2.3 Alternatives Considered But Eliminated

Use of Other Chemical Types (Roundup, 2,4-D, etc.)
The use of other chemical types would not accomplish our objectives of treating a specific percentage of sagebrush while leaving the understory mostly intact. Many other chemicals, such as Roundup, will kill or suppress any living vegetation it encounters; this means that an aerial application of this herbicide would likely kill all living vegetation in the treatment area as it must be applied in liquid form; this would be true for most other alternative chemicals as well.

The alternative herbicides could be applied by backpack sprayer directly to the plant but this option would be very time consuming as well as very expensive in terms of personnel time.

2.4 No Action Alternative

No vegetation treatments would be applied on the Little Owyhee Allotment. The chances of a large catastrophic wildfire event would increase with each passing year. The loss of sagebrush that provides habitat and food for sage-grouse, pygmy rabbits, and a variety of other species could be completely lost in the event of a large wildfire.

3.0 AFFECTED ENVIRONMENT

3.1 Critical Environmental Elements

The following critical elements of the human environment are present and affected or could be affected by the proposed action and alternative: Air Quality, Cultural Resources, Invasive Non-native Species, Migratory Birds, Native American Religious Concerns, Special Status Species, Wastes, Water Quality, and Wilderness/Wilderness Study Areas.

Table 1. Critical Environmental Elements

Critical Element	*Present*		*Affected*		*Rationale*
	Yes	No	Yes	No	
Air Quality	Present		Affected		Sections 3.1.1, 4.1.1, and 5.1
ACEC's		Not Present		Not Affected	Not Present.
Cultural Resources	Present			Not Affected	No new ground disturbance is associated with the proposed action or alternatives. Spike has no known effect on cultural resources.
Environmental Justice		Not Present		Not Affected	No affected parties exist in the specific site area.
Floodplains		Not Present		Not Affected	
Invasive, Non-native Species	Present		Affected		Sections 3.1.2, 4.1.3, and 5.3
Migratory Birds	Present		Affected		Migratory birds have been recorded in the area in prior years. Sections 3.1.3, 4.1.4, and 5.4
Native American Religious Concerns		Not present	Not Affected		Neither the Battle Mountain Band Council or the Ft. McDermitt Tribal Council expressed concerns with regard to the proposed action or alternatives.
Prime or Unique Farmlands		Not Present		Not Affected	None known or researched in the area.
Threatened and Endangered Species	Present		Affected		Sections 3.1.4, 4.1.8, and 5.8
Wastes, Hazardous or Solid		Not Present		Not Affected	Section 3.1.5
Water Quality (Surface and Ground)	Present			Not Affected	Present but treatments will not be conducted in such zones. Sections 3.1.6, 4.1.9, and 5.9
Wetlands and Riparian Zones	Present			Not Affected	Present but treatments will not be conducted in such zones.
Wild and Scenic Rivers	Present			Not Affected	Present but treatments will not be conducted in such zones.
Wilderness	Present			Not Affected	Wilderness Study Areas are present but treatments will not be conducted in such zones.

3.1.1 Air Resources

Air quality within the general area of the proposed action is considered good, but there is no monitoring data for pollutants; however most undeveloped regions have ambient pollutant levels below the measurable limits.

3.1.2 Invasive Non-native Species

Several laws authorize control of noxious weeds on public land under the BLM's administrative jurisdiction (e.g., The Federal Insecticide, Fungicide and Rodenticide Act of 1972, Federal Noxious Weed Act of 1974, FLPMA (1976), and the Public Rangelands Improvement Act of 1978).

Nevada Revised Statutes, Chapter 555.05 defines "noxious weeds" and mandates land owners and land management agencies to include control of noxious weeds on lands under their jurisdiction.

Nevada has listed 42 non-native invasive plant species that require control. Of these 42 species, 13 are found on the Winnemucca District (Table 2).

Table 2. Invasive, Non-Native Species found in the Winnemucca District.

Common Name	Scientific Name
Poison Hemlock	*Conium maculatum*
Russian Knapweed	*Acroptilon repens*
Spotted Knapweed	*Centaria maculosa*
Leafy Spurge	*Euphorbia elsua*
Medusahead	*Taeniatherum caput-medusae*
Perennial Pepperweed	*Lepedium latifolium*
Puncturevine	*Tribulus terrestris*
Salt Cedar (Tamarisk)	*Tamarix ramosissima*
Canada Thistle	*Circium arvense*
Musk Thistle	*Cardus nutans*
Scotch Thistle	*Onopordum acanthium*
Yellow Star Thistle	*Centaria solstitalis*
Hoary Cress	*Cardaria draba*

Infestation of Hoary Cress (*Cardaria draba*), Perennial Pepperweed (*Lepidium latifolium*), and saltcedar (*Tamarix* spp.) have been documented within the Little Owyhee Allotment. Most infestation within the allotment are located along main roads and trails within project area. Treatment for hoary cress occurred in spring\summer of 2005 within the allotment.

3.1.3 Migratory Birds

Migratory birds are protected and managed under the Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. 703 *et. seq.*) and Executive Order 13186. Under the MBTA nests (nests with eggs or young) of migratory birds may not be harmed, nor may migratory birds be killed. Executive Order 13186 directs federal agencies to promote the conservation of migratory bird populations.

Migratory birds that may be associated with the project areas include: black-throated sparrow (*Amphispiza bilineata*), Brewer's blackbird (*Euphagus cyanocephalus*), Brewer's sparrow (*Spizella breweri*), burrowing owl (*Athene cunicularia*), canyon wren (*Catherpes mexicanus*), gray flycatcher (*Empidonax wrightii*), green-tailed towhee (*Pipilo chlorurus*), loggerhead shrike (*Lanius ludovicianus*), rock wren (*Salpinctes obsoletus*), sage sparrow (*Amphispiza belli*), sage

thrasher (*Oreoscoptes montanus*), western meadowlark (*Sturnella neglecta*), and vesper sparrow (*Pooecetes gramineus*).

3.1.4 Threatened and Endangered Species

There are no known threatened and endangered species in the proposed project areas. BLM Sensitive and Nevada Natural Heritage Program (NNHP) Sensitive, Watch List, and Rare Species, State Protected, and U.S. Fish and Wildlife Service (USFWS) listed species that may occur within the vicinity of the project areas are presented in Table 3.

Table 3. Threatened, Endangered and Special Status Species.

Common Name	Scientific Name	Status Designation
Pygmy rabbit	*Brachylagus idahoensis*	- BLM Sensitive
Townsend's big-eared bat	*Corynorhinus townsendii*	- BLM Sensitive - NNHP Sensitive
Spotted Bat	*Euderma maculatum*	- BLM Sensitive - State Protected - NNHP Rare
Davis Peppergrass	*Ledpidium davisii*	-BLM Sensitive -FWS Species of Concern -NNHP Watch List
Bruneau River Prickly Phlox -or- Owyhee Prickly Phlox	*Leptodactylon glabrum*	-BLM Special Status -FWS Species of Concern -NNHP Watch List
Long-eared myotis	*Myotis evotis*	- BLM Sensitive - NNHP Watch List
Long-legged myotis	*Myotis volans*	- BLM Sensitive - NNHP Watch List
Small-footed myotis	*Myotis ciliolabrum*	- BLM Sensitive - NNHP Sensitive
Sadas pyrg	*Pyrgulopsis sadai*	-BLM Sensitive
Fringed myotis	*Myotis thysanodes*	- BLM Sensitive - NNHP Sensitive
Greater sage-grouse	*Centrocercus urophasianus*	- BLM Sensitive - State Protected - NNHP Sensitive
Bald Eagle	*Haliaeetus leucocephalus*	- Federal Threatened - State Protected - NNHP Sensitive

3.1.5 Hazardous Materials

Herbicide would not be stored at the project site. Product label directions and MSDS would be available on site for reference in case of spill or exposure.

Herbicide treatment would follow BLM procedures outlined in BLM Handbook H-9011-1 (Chemical Pest Control), and manuals 1112 (Safety), 9011 (Chemical Pest Control), and 9015 (Integrated Weed Management), and would meet or exceed state label standards. Treatments

would comply with the USEPA label and would follow the recommendations provided in DOW AgroSciences Product Bulletin Special 2 (ee).

All unused chemicals or empty containers would be disposed of by the licensed herbicide applicator in accordance with the USEPA label at an approved disposal site.

No waste, hazardous or solid would be associated with the proposed action.

3.1.6 Water Quality

The project area boundary straddles two hydrographic basins: the Humboldt River Basin occupies the southern third of the project area, and the Snake River Basin comprises the northern two thirds of the area. There are numerous water resources within the project boundary, including: perennial and ephemeral streams, springs and seeps, wells, and stock reservoirs (please refer to the Water Inventory Map-Appendix II). The North Fork of the Little Humboldt is the only stream which is perennial for its entire length, while the remainders flow for short distances or only in direct response to seasonal climatic conditions (snowmelt and/or intense rainfall events).

Little data is available to describe the quality of the waters within the project area. The quality is considered to be good however, due to the relatively minimal amount of human induced disturbance within the project area. The only known causes of impacts to water quality are from livestock and wild horse grazing. Likewise, data describing groundwater conditions within the area are equally sparse. A search of the Nevada State Engineer's well log data base indicates the ground water has typically been encountered between 475 feet to 700 feet below ground surface (bgs) depending upon the elevation. A single well was noted to have standing water 8 feet bgs. This well was most likely associated with perched groundwater due to the presence of clay from the weathering of volcanic rock.

3.2 Additional Affected Resources

In addition to the critical environmental elements, the following resources, which are present and affected by the proposed action and alternative, are described: grazing, recreation, soils and vegetation, wild horses, and wildlife and fisheries. Those resources that are either not present or not affected by the proposed action or alternative are not presented.

3.2.1 Grazing

The herbicide application will take place in the fall during which time relatively few livestock remain on the Little Owyhee Allotment. Out of the approximately 22,000 AUMs permitted annually, only 2,500 are harvested from 09/01 to 02/28. The northwest quadrant of the allotment is reserved for summer use. Little disruption to livestock operations would be expected.

Depending on the application schedule employed, livestock grazing may be deferred from treated areas during the second and third grazing season after application. The intent of the

deferment is to allow maximum response of the grass/forb component and maximum seed production.

3.2.2 Recreation

Primary recreational activities that occur in the proposed project area are hunting, off-road vehicle use, and hiking/walking. Vehicle use includes back country touring and exploration on the numerous primitive roads/trails found in the area. Hunting seasons in the area run from early August (antelope season) thru the end of the year. Rifle deer season, chuckar, and sage-grouse seasons all usually begin in early October. Consequently, heaviest hunting usage occurs from early October until snowfall.

3.2.3 Soils and Vegetation

The soils are generally shallow to a duripan or bedrock, well drained, that formed in loess and silty alluvium from mixed rock sources with influence from volcanic ash. These soils contain between 0.8 to 2.0 percent organic matter and the clay content of the soil surface is between 10 to 18 percent, subsoil clay content is between 10 to 35 percent. The soil surface layer is 4 to 10 inches thick and the subsoil is 8 to 15 inches thick. The water and wind erosion hazard is slight to moderate depending on slopes (2 to 15 percent) and rock fragment content of 0 to 50 percent.

Vegetation composition within the proposed treatment area is primarily Wyoming big sagebrush-grass mixture. The dominant ecological sites are the loamy 8 to 10 inch precipitation zone and the droughty loam 8 to 10 inch precipitation zone. The loamy ecological site has an available water holding capacity of 3.5 to 7.5 inches (low or moderate available water capacity). The loamy ecological site is in mid-ecological status with an understory of Sandberg bluegrass and bottlebrush squirreltail. The droughty loam ecological site has an available water holding capacity of less than 3.5 inches (very low water holding capacity). The droughty loamy ecological site is in late ecological status with an understory of Thurber's needlegrass, bottlebrush squirreltail, and Sandberg bluegrass.

Cheatgrass is sparse in the northwestern two thirds of Little Owyhee allotment; refer to Little Owyhee Allotment Weed Inventory and Percent Cheatgrass Cover Map (Appendix III). The southwest portion of the Little Owyhee allotment has the highest percent of cheatgrass by composition, 15 to 30 percent. No treatments are proposed in this area. The eastern portion of the Little Owyhee allotment has cheatgrass composition ranging from 0 to 15 percent.

It is anticipated that the herbicide treatment would increase native perennial grasses and forbs. Cheatgrass would also increase, but the herbicide treatment would allow for the existing native perennial plants to increase in vigor, production, and seed production. It is anticipated that native perennial plants would dominate the site.

3.2.4 Special Status Species

Special status species (SSS) for the allotment include those species listed or proposed for listing under the Endangered Species Act of 1973, as amended, species designated by the FWS as

candidates for listing and species identified as BLM sensitive species in Nevada (Refer to Table 3 for listing). Both sage-grouse (*Centrocercus urophasianus*) and the pygmy rabbit (*Brachylagus idahoensis*) are native sagebrush obligate species found in the Little Owyhee allotment. The issue with these two species is that removal or lessening the amount of sagebrush may impact them.

3.2.5 Wild Horses

The proposed affected environment includes the Little Owyhee Herd Management Area (HMA). This area has an appropriate management level (AML) of 194-298 horses.

3.2.6 Wildlife and Fisheries

The wildlife fauna for the proposed project area are those wildlife characteristic of the northern Great Basin Ecosystem. Mammals typical of the area include mule deer (*Odocoileus hemoinus*), pronghorn antelope (*Antilocapra americana*), coyote (*Canis latrans*), jackrabbit (*Lepus californicus*), ground squirrel and various other rodents. Common birds include ravens (*Corvus corax*), various hawk species, and Neotropical migratory birds. Other smaller wildlife species are those commonly found in the northern Great Basin ecosystem.

The North Fork of the Little Humboldt River and the Little Owyhee River are classified as fisheries.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Proposed Actions and Alternatives

4.1.1 Air Resources

Proposed Action
There would be a slight negative impact to air quality during the application caused by an increase in dust and engine exhaust or rotor disturbance generated by the treatment method.

No Action Alternative
If the no action alternative is selected there would be no air quality impacts.

4.1.2 Grazing

Proposed Action
The areas affected by the proposed action equate to less than one percent of the allotment and are not areas that livestock and wild horses are dependent on as a forage base. Therefore, the effects to these animals are expected to be minimal. The animals may be drawn to treatment areas if the reduction of sagebrush results in increased number and vigor of understory grasses. The treatment areas will not be closed to grazing as they are widely scattered throughout the allotment and closure would not be feasible.

No Action Alternative
No roadside vegetation would be treated in order to expand existing fuelbreaks. This action could result in less effective control of wildfires allowing extensive acreage to burn. The loss of sagebrush habitat would require rehabilitation of the burned area and temporary closure to grazing.

4.1.3 Invasive Non-Native Species

Proposed Action
There is a potential for invasive non-native species to invade the project area following treatment. However, since ground disturbance would be minimal, and most vegetation would remain present within the treated area, the potential is low.

No Action Alternative
If the no action alternative is selected there will be no impacts to Invasive Non-Native Species. However, large scale wildfire has the potential to create improved conditions for post-fire colonization by invasive non-native species.

4.1.4 Migratory Birds

Proposed Action
Migratory birds will not be affected due to the treatment implementation time. The treatment will be applied in the fall (September), after most migratory birds have left the area.

No Action Alternative
If the no action alternative is selected there will be no impact to migratory birds.

4.1.5 Recreation

Proposed Action
There likely will be some (temporary) effects to individuals and groups hiking or doing off-road touring in the area. These effects would occur as a result of the actual aerial application of the herbicide, temporarily disturbing such activities. It is likely that hunting will be the recreational activity most affected, if the proposed action takes place during the fall. There would be temporary disturbance of hunters engaged in hunting or driving to or from hunting areas during the time of actual application of herbicide. Recommended mitigation is to plan the application so as not to occur during the heaviest hunting usage, i.e. not during October. October will likely be the period of heaviest use by hunters, as rifle deer season, chukar, and sage-grouse seasons all begin in early to mid-October.

No Action Alternative
If the no action alternative is chosen there will be no direct or immediate impacts to recreation. However if a large fire were to occur it would displace wildlife, which would adversely affect hunting and other recreational activities in the area.

4.1.6 Soils and Vegetation

Proposed Action
There would be a slight negative impact to soil caused by increased erosion. The treatment will extend on each side of the selected roads 20-30 feet for a total of 60 feet including the roadbed. The treatment is a narrow linear strip along existing roads, the perennial grass basal cover and litter from the treatment would remain providing for soil surface protection.

The susceptibility of sagebrush on shallow soils with low organic matter is normally increased due to the increased soil availability of Spike 20P and shallow rooting depth. Soil containing Spike 20P may be moved from the treated areas by water and wind erosion. It is unlikely that the soil containing Spike 20P would travel more than a few feet from the treated areas, unless a severe preciptation event affected the treatment area.

A droughty loam ecological site in late (seral) status has a diverse understory of grasses and forbs. This late status site would have sufficient perennial grasses to limit the establishment of cheatgrass and other annual species. The loamy ecological site in mid (seral) status would have a higher potential for cheatgrass and other annuals species to establish. The density of Sandberg bluegrass may not be sufficient to limit the establishment of cheatgrass and other annual species.

Spike 20P may injure or suppress forbs in treated areas. Injury to forbs would be tolerated to prevent loss of large continuous sagebrush landscape from potentially large catastrophic wildfire event, such as the Quinn/Odell fire. The Quinn/Odell fire occurred on August 26 through September 2, 1996. This fire burned 8,476 acres; suppression effort stopped the Quinn/Odell fire at the Little Owyhee Road serving as a fuelbreak. If the suppression effort had failed to contain this fire at the Little Owyhee Road, westerly winds could have pushed it many miles to the east, through the uniform sagebrush stands. Fuelbreaks such as the Little Owyhee Road and expanded fuelbreaks along other roads would lessen the likelihood of a catastrophic wildfire event.

No Action Alternative
If the no action alternative is chosen, the potential for catastrophic wildfire events would remain along with the potential for significant loss of soil through erosion and disruption of soil processes (hydrologic cycle, nutrient cycle, and energy flow). A catastrophic fire event would eliminate vegetation, surface litter, and biological soil crusts for 35 to 100 years if the fire regime is not altered by establishment of cheatgrass and other annual species.

4.1.7 Special Status Species

Proposed Action
Impacts would be similar to those described in section 4.1.8 and 4.1.10.
The proposed action is expected to reduce the sagebrush just adjacent to the Little Owyhee allotment road network. This reduction would be expected to impact the sage-grouse and pygmy rabbit habitat just within the 20-30 feet to the left and right of the roads. Road and trail areas are often avoided by some wildlife and are therefore are temporally displaced. The risks to sage-grouse from the loss of habitat along roads and trails should be minimal for this reason. Sage-grouse especially as chicks rely almost entirely on insects and the insect abundance is expected to increase in the firebreaks where grasses and forbs are predominant. Pygmy rabbits in the

spring, summer, and fall also eat grasses and forbs as a significant portion of their diet. Therefore, the proposed action is expected to enhance the potential for both of these species populations through the proposed fuelbreaks.

No Action Alternative
The no action alternative would not enlarge the firebreaks and would jeopardize the sage-grouse, pygmy rabbit, and other sagebrush obligate species populations due to the potentially devastating effects of an uncontrolled wildfire.

4.1.8 Threatened and Endangered Species

Proposed Action
The Threatened and Endangered Species listed on Table 3 are not expected to be negatively affected as populations but rather their future would be enhanced. The success of this project will ensure that the flora of the sagebrush ecosystem in and adjoining the Little Owyhee allotment and the associated fauna will not experience a potentially large catastrophic wildfire event.

No Action Alternative
If the no action alternative is selected there would be no direct impacts to Threatened and Endangered Species, however the danger of a large, possibly catastrophic wildfire would remain.

4.1.9 Water Quality

Proposed Action
Direct impacts from the proposed action would be avoided by adhering to the stated mitigation measures described in section 2.2. There is a slight possibility of surface water contamination if a high intensity rainfall event were to occur prior to the breakdown of the clay pellets. This could allow for the herbicide to be washed into the surface drainage system prior to it becoming adsorbed onto the soil particles. This potential is considered to be slight due to 100-foot untreated buffer areas being applied to all surface water bodies.

No Action Alternative
If the no action alternative is selected, no impacts to water quality would occur.

4.1.10 Wild horses

Proposed Action
Many reservoirs utilized by wild horses exist within the proposed treatment area. Because the application of tebuthiuron would not occur any closer than 100 feet from open water sources no impacts would be expected.

The plant targeted to be thinned is sagebrush, which is rarely utilized by wild horses in this area and therefore should not have a large impact on forage availability.

No Action Alternative

If roadside vegetation was not treated, there would be a greater risk of wildfires burning larger areas of land. This would negatively affect wild horses in the area because a larger amount of forage could be lost. The loss of vegetation would require rehabilitation of the burned area, temporary closure, and possibly a temporary removal of wild horses from the area.

4.1.11 Wildlife and Fisheries

Proposed Action
Impacts to wildlife should be minimal as the treatment areas are immediately adjacent to existing roads. Fisheries would not be affected because treatment areas would not occur next to or within stream areas.

No Action Alternative
If the no action alternative is chosen there will be no impacts to wildlife and fisheries.

5.0 CUMULATIVE IMPACT ANALYSIS

The Council of Environmental Quality (CEQ) regulations implementing NEPA defines cumulative impacts as "…[T]he impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (Federal or Non-Federal) or person undertakes such actions." Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

The cumulative impact assessment area for this EA lies within several watersheds (Appendix V): Willow Creek, Raven Creek, Upper Little Owyhee River, Lake Creek, South Fork of the Little Humboldt, and Little Humboldt/Eden Creek (USDA 2006a). The area consists of approximately 813,914 acres of which about 783,744 acres are public lands, and 30,170 acres are private lands. The area lies on the Oregon-Nevada border on the north end, and the Snowstorm Mountains on the southern end.

Past and Present Actions

On the basis of aerial photographic data, agency records and GIS analysis, the following past and present actions, which have impacted the assessment area to varying degrees, have been identified: livestock grazing, mining, wildfire, and recreational activity.

Livestock Grazing **-** Livestock grazing has a long history in the region dating back to the 1800's. Today, it remains the dominant use of the entire cumulative impact assessment area. Throughout its history, ranching has remained a dispersed activity characterized by localized areas of more intensive use.

Portions of two different allotments on the Winnemucca District are represented in the assessment area (BLM 2006a). The majority of the acreage is within the Little Owyhee Allotment, the remaining acreage lies within the Bullhead Allotment. There are interspersed private lands that lie within all of the allotments (BLM2006a).

In order to support the management of these allotments, a variety of range improvement projects have been implemented through the years. Collectively, 230 miles of permanent fencing (both public and private) and 29 miles of water pipelines have been constructed in support of grazing management objectives in the assessment area (BLM2006b).

Over the last 20 years, grazing use within the assessment area has remained mostly static as there has been little to no development of the area.

Mining - The assessment area, which covers portions of the historic Snowstorm Mountain, Scraper Springs, and Burner mining districts has a history of minerals activity dating to the latter part of the 19th century (Tingley, 1998). In general the activity has been intermittent. None of the impacts associated with any of these historic mining operations have been subject to reclamation. Since this time, relatively little activity beyond periodic exploration activities has occurred in the assessment area.

Wildfire - Four separate wildfires have burned in within the overall watershed area (Appendix IV), approximately 62,244 acres have burned (roughly 7% of the total assessment area acreage). Most of the affected areas have been subjected to a variety of stabilization and rehabilitation treatments with mixed results (BLM2006d).

Recreational Activity - Most recreational activity in the area occurs in the late summer and fall months. The main recreational activity is hunting.

Reasonably Foreseeable Future Actions

All of the past and present actions discussed above are expected to persist into the foreseeable future, though the relative intensity of these actions could vary depending on a variety of economic and other factors.

Livestock Grazing - The intensity and character of livestock grazing is anticipated to remain consistent into the foreseeable future. At the current time, there are no proposals to change stocking levels or seasons of use of any of the allotments represented in the assessment area. It is reasonably foreseeable, however, that small-scale range improvements, such as exclosures, troughs, water pipelines, or fences could be proposed in support of allotment-specific objectives.

Mining - The level of mining activity in the assessment area will depend on future values of precious metals, especially gold. The historic pattern in gold values has been one characterized by considerable fluctuation, resulting in repeated boom and bust cycles.

Wildfire - While the occurrence of wildfire is unpredictable, it is likely based on historical patterns, that wildfire will again burn parts of the assessment area. BLM fire management policy states that wildfire will be aggressively suppressed, which makes it likely that suppression techniques such as the construction of dozer line, the cross- country travel of engines, the implementation of retardant drops, and the establishment of base camps for fire fighters are reasonably foreseeable.

Due to past management practices, including wildfire suppression, vegetation in the assessment area has deviated from the natural mosaic process created by wildfire. It is reasonably foreseeable that a large wildfire could burn unchecked across the assessment area and destroy the large decadent stands of sagebrush that still exist within the area. Destruction of large amounts of acreage resulting from wildfire would destroy valuable wildlife habitat and natural vegetation.

Depending on the severity of the fire, and the nature of topography and soils, it is also reasonably foreseeable that some combination of rehabilitation and stabilization treatments such as dozer line stabilization, road repair, the construction of erosion or sediment control structures, the repair of damaged range improvements and facilities, drill and/or aerial seeding, range closures, greenstripping and non-native weed control would be implemented.

Recreational Activity - Recreational use will probably remain static or increase slightly as a result of population growth in the areas that surround the watershed. Some activities such as hunting and off-road vehicle use will be likely to continue to increase over time. It is possible that hunting activities could be limited or prohibited by the Nevada Department of Wildlife Game Regulations. It is likely that motorized recreational use, which is currently very limited in the two existing Wilderness Study Areas, could be prohibited by future proposed Wilderness designation within the assessment area.

5.1 Impacts Associated With Past, Present, and Reasonably Foreseeable Future Actions

5.1.1 Air Resources

Past and Present Actions
Ground-disturbing activities from livestock/wild horses grazing, recreation, and road construction/maintenance have generated low air quality effects in the impact assessment area. The past and present air quality impacts are short-term and cease once the ground-disturbing activity is completed. Grazing and recreational activities have generated little to no impact to air quality within the impact assessment area.

Reasonably Foreseeable Future Actions
Increased ground-disturbing activities from vegetation projects, recreation and road construction/maintenance would contribute a low impact to air quality within the impact assessment area; however, these anticipated impacts would be short-term and would cease once the ground-disturbing activity is completed. Additional traffic and therefore additional long-term impacts to air quality can be expected from increased recreational use.

Cumulative Impact
Air quality within the impact assessment area has been slightly impacted through time largely from livestock/wild horse grazing, recreation, and road construction/maintenance. Even with the development of the Proposed Action, impacts to air quality would likely remain equally low into the foreseeable future. If vegetation projects designed to improve the health of the vegetation

communities are not implemented, catastrophic fires would cause significant impacts to air resources from both smoke and dust.

5.1.2 Grazing

Past and Present Actions
Past and present grazing has and continues to have an impact on the assessment area in several ways. It is likely that cultural sites have been disturbed by grazing animals. The alteration of vegetation and soil has resulted in increased susceptibility to water and wind erosion. The presence of livestock, wild horses, livestock and horse management activities, and range improvement projects has influenced the presence and behavior of wildlife. All of these factors have an effect on water quality via erosion, animal waste, and mechanical disturbance within the assessment area.

Reasonably Foreseeable Future Actions
All past and present actions are anticipated to remain consistent into the foreseeable future. Impacts to cultural, wildlife, soil and water resources by grazing animals are expected to remain relatively constant.

Cumulative Impact
Impacts from past grazing have been curbed through mitigation measures. These measures are expected to hold constant or lessen impacts to soils, water quality and cultural resources.

5.1.3 Invasive Non-native Species

Past and Present Action
Creation of roads within the assessment area created corridors that allowed for the spread of invasive/noxious species into the region. Past ground disturbing activities, such as OHV use, use by livestock and wild horses, and development of a natural gas pipeline, have caused localized vegetation disturbance which has allowed for colonization by invasive/noxious species. Treatment of invasive/noxious weeds has been occurring within the region.

Reasonably Foreseeable Future Actions
Increased recreation use is possible in the assessment area, which is likely to promote the spread of invasive non-native species within the assessment area, including the introduction of additional invasive species not currently present in the area.

Future fuels reduction or other vegetation projects within the assessment area have the potential to promote the spread of invasive/noxious weeds. However, mitigation would be incorporated into these projects to reduce the spread of weeds, so impacts would likely be minimal. In addition, if future vegetation projects improved the health of native plant communities, these plant communities would likely be less susceptible to invasion by invasive non-native species.

Increased treatment of invasive/noxious weeds along roads and trails would likely occur in the assessment area reducing the spread of invasive/noxious species.

Cumulative Impact
Due to the small area involved for this project, and the absence of ground disturbing activities, the cumulative impacts on invasive non-native species within the assessment area would be low.

5.1.4 Migratory Birds

Past and Present Actions
The past and present actions have promoted the monoculture of the sagebrush ecosystem adjacent to the roads and trails. As the network of roads and trails has increased over the cumulative impact area the potential for extensive wildfires has also increased.

Reasonably Foreseeable Future Actions
The roadside habitat would change from a sagebrush dominant community to a grass community. This is expected to result in an increase in species dependent on grassland habitats in the proposed treatment area, it may also lead to increased numbers of birds over the long term.

The proposed action would remove a minor portion of the sagebrush ecosystem, adjacent to the Little Owyhee allotment roads, critical to migratory birds. The consequence of not implementing this firebreak project is to increase the potential for subjecting the entire Little Owyhee allotment to the ravages of a wildfire and potentially changing currently occupied habitat to unoccupied because it would become non-habitat.

Cumulative Impact
Collectively, migratory birds would continue to use the impact assessment area regardless of whether the Proposed Action is implemented. However, the species and number of individual birds would likely change.

If the vegetation treatment is not implemented, potential catastrophic wildfires would be more likely to significantly impact migratory bird resources for the entire assessment area.

5.1.5 Recreation

Past and Present Actions
As a network of roads has gradually increased over the cumulative impact area, recreational use has also increased. Availability and affordability of ATV's has accelerated this trend. Hunting activity, a dominant recreational use in the area, has fluctuated along with fluctuations in wildlife populations over the years.

Reasonably Foreseeable Future Actions
It is likely that all recreational activities will continue to gradually increase in the cumulative impact area if the economic climate stays stable or improves. Any future actions that affect wildlife populations in the area will have an indirect effect on the recreational activities of hunting and off-road vehicle use.

Cumulative Impact

The recreational activity of hunting could see slight changes as a result of indirect effects from the proposed action; i.e., if wildlife populations change following the proposed action, that could affect hunting. Seen in the context of the entire cumulative impact area, as described above (5.0), it seems unlikely that the collective impacts would be significant, either positive or negative on recreational use.

5.1.6a Soils

Past and Present Actions
In the past, livestock and wild horse grazing have contributed to significantly impacting the soil resource. In the past, the soil tolerance was exceeded and the soil medium for plant growth was not maintained. The present grazing system and established appropriate management level (AML) for wild horses has reduced past soil impacts and improved current soil resource conditions.

Reasonably Foreseeable Future Actions
Future activities from livestock/wild horse grazing, recreation, road construction and maintenance, and vegetation projects would continue to slightly impact the soils within the impact assessment area. Impacts from grazing are likely to change and continue to improve from present conditions. Impacts from recreation and road construction or maintenance would slightly increase from the past and present conditions. Impacts from implementation of vegetation projects would increase short term impacts to soil resources but would greatly lessen impacts from catastrophic fires and would maintain and improve soil resources.

Cumulative Impact
Collectively, continued recreation, vegetation projects, road construction and maintenance would continue to slightly impact soils within the impact assessment area, regardless of whether the Proposed Action is approved. If vegetation projects to improve the health of the vegetation communities are not implemented catastrophic fires are more likely to significantly impact soil resources through reduced soil productivity from wind and water erosion.

5.1. 6b Vegetation

Past and Present Actions
In the past, livestock/wild horse grazing activities had significant impacts to the vegetation resources within the impact assessment area by eliminating or greatly reducing the primary successional understory plants. Cheatgrass was introduced into the area in the early 1900's. The present actions of implementing livestock grazing systems and establishing appropriate management level (AML) for wild horses has reduced past impacts and improved vegetation understory conditions. The primary successional understory plants species are slowly returning and vegetation conditions are improving, but may never be able to return to their potential. At present, the sagebrush sea of the Owyhee Desert is a mature even-aged stand having high potential for catastrophic fires.

Reasonably Foreseeable Future Actions
Future vegetation projects are anticipated to have a low effect on the vegetation resources within the impact assessment area. Impacts from grazing are likely to improve slowly from present conditions. Recreational uses, vegetation projects, and road construction/maintenance may increase and cause low impacts to vegetation resources in the foreseeable future. Impacts from implementation of vegetation projects would increase short term impact to vegetation resources but would greatly lessen impacts from catastrophic fires and would improve vegetation resources.

Cumulative Impact
Collectively, if vegetation projects are implemented, vegetation resources would continue to improve. The vegetation projects would have a low impact to the vegetation resource within the impact assessment area overall. The vegetation projects would maintain and improve the health and diversity of the sagebrush sea of the Owyhee Desert. If the present mature age class of the sagebrush of the Owyhee Desert remains, catastrophic fires would eliminate the sagebrush sea and it would be lost.

5.1.7 Special Status Species

Past and Present Actions
The dominant uses within the Little Owyhee Allotment are livestock grazing and dispersed recreation. Livestock grazing has had some impacts on special status species through grazing of vegetation and hoof action. Recreation may have had a small impact on special status species as people may collect, hunt, and/or collect Special Status Species.

Reasonably Foreseeable Future Actions
The increase in fuelbreaks may serve to protect the Special Status Species populations from potential catastrophic wildfires.

Cumulative Impact
Collectively, Special Status Species would continue to use the area within the impact assessment area in altered numbers and distribution. If the vegetation treatment is not implemented, potential catastrophic wildfires would be expected to impact any Special Status Species present.

5.1.8 Threatened and Endangered Species

Past and Present Actions
The dominant uses within the Little Owyhee Allotment are livestock grazing and dispersed recreation. Livestock grazing and/or recreation have had no known impacts on threatened and endangered species. Currently no Threatened and Endangered Species are present within the impact assessment area.

Reasonably Foreseeable Future Actions
The anticipated increase of grasses is not expected to impact any threatened or endangered species.

Cumulative Impact
No cumulative impacts would affect any threatened and/or endangered species because no threatened or endangered species are present.

5.1.9 Water Quality

Given the proposed mitigation measures, no direct impacts are anticipated; therefore, no cumulative impacts will occur.

5.1.10 Wild Horses

The Little Owyhee HMA is approximately 460,000 acres and was established in 1977. The Little Owyhee HMA extends from the Oregon/Idaho border to the Little Humboldt River and is 20 air miles northeast of Paradise Valley.

Past and Present Actions
A wild horse gather took place within the proposed project area in September of 2004. 563 horses were captured and 465 were removed.

Reasonably Foreseeable Future Actions
Wild horse gathers in this HMA are generally scheduled on a 4 year cycle. The next planned gather is tentatively scheduled for September 2008.

Cumulative Impacts
Collectively, recreation, vegetation projects, and livestock grazing would continue to slightly impact wild horses within the proposed impact assessment area, regardless of whether the Proposed Action is approved. If vegetation projects to improve the health of the vegetative portion of the habitat are not implemented, catastrophic fires could significantly impact wild horse habitat.

5.1.11 Wildlife and Fisheries

Past and Present Actions
The dominant uses within the Little Owyhee Allotment are livestock grazing and dispersed recreation. Livestock grazing has had some impact on wildlife and fishery habitat through forage and cover alteration and reduction. Recreation may have some impact on wildlife and/or fisheries through over-harvest and poaching.

Reasonably Foreseeable Future Actions
The anticipated increases in wildlife populations closer to roads may lead to an increase in hunting and/or poaching. The improvement of fuelbreaks is expected to increase protection of wildlife and fishery populations from potential catastrophic wildfires.

Cumulative Impact
Collectively, if the proposed vegetation project is implemented, minor impacts to wildlife would be expected to occur.

6.0 PROPOSED MITIGATION AND MONITORING

6.1 Proposed Mitigation and Monitoring During Treatment

A BLM approved Project Inspector will be on site within the project area at all times while the herbicide is being applied and will be responsible for ensuring that the treatment is applied as directed. Chemical label directions will be followed. BLM procedures and methods will be followed as set forth in the Vegetation Treatment on BLM Lands in Thirteen Western States Program EIS for Fiscal Year 1991 and WFO Environmental Assessment Herbicide Application for Control of Noxious Weeds NV-020-99-10 (January 19, 1999). See also Programmatic Environmental Assessment of Integrated Weed Management on Bureau of Land Management Lands NV-020-08-11.

Project Inspectors will watch for any noxious weeds listed in Table2. In the event of a noxious weed being identified the Project Inspector will GPS the exact location of the noxious weed and report back to the noxious weed specialist.

6.2 Proposed Mitigation and Monitoring Following Treatment

The project site will be monitored by the BLM after treatment to determine the effectiveness of the treatment. If there is no sign of a "kill" within three years, the project will be re-applied for (by the BLM) through fuels funding methods and retreated when such funds become available.

Future treatments or maintenance will depend on the rate that sagebrush spreads back into the treated areas. When sagebrush crown cover reaches greater than 15 percent the area will be considered for re-treatment.

Cheatgrass on the treatment areas will also be monitored by the BLM. If greater concentrations of cheatgrass are found to be invading treatment areas, project funding will be applied for to treat the encroaching cheatgrass.

7.0 CONSULTATION AND COORDINATION

7.1 List of Preparers

Bureau of Land Management

Mark Ennes	Cultural Resources/Native American Religious Concerns
Celeste Mimnaugh	Rangeland Management Specialist
Derek Messmer	Weeds Specialist
Mike Zielinski	Soils and Vegetation Specialist
Craig Drake	Hydrologist
Clarence Covert	Wildlife Biologist
Heidi Hopkins	Wild Horse and Burro Specialist
Chuck Schlarb	Engineering
Jamie Thompson	Public Outreach

Lynn Harrison	Planning and Environmental Coordinator
Angie Messmer	Fire Ecologist-Project Lead
Gerald Gulley	Outdoor Recreation Planner

7.2 Persons, Groups, or other Agencies Consulted

Duane Boggio
Cassinelli Brothers
Nevada Department of Administration, Budget and Planning Division
Elko County Commissioners
Jerry Harper
Humboldt County Commissioners
Natural Resources Conservation Service
NDOW-Elko
NDOW-Fallon
NDOW-Winnemucca
Nevada Cattlemen's Association
Nevada First Corporation
Nevada Woolgrowers
Oregon Natural Desert Association
United States Fish and Wildlife Service
Western Watersheds Project

In addition to the individuals/organizations listed above, the following Native American Tribal Councils were notified of the proposed action and alternatives and were asked to express any concerns they might have.

Ft. McDermitt Tribal Council
Battle Mountain Band Council

8.0 REFERENCES

Bureau of Land Management

2006a Grazing Allotments, GIS Layer (current as of: 8/8/06).Winnemucca Field Office.

2006b Range Improvement Lines and Points, GIS Layers (current as of: 8/8/06). Winnemucca Field Office.

2006c Roads, GIS Layer (current as of: 8/8/06). Winnemucca Field Office.

2006d Fire History, GIS Layer (current as of: 8/8/06). Winnemucca Field Office.

2006e Weeds Layer, GIS Layer (current as of: 8/8/06). Winnemucca Field Office.

DOW AgroSciences

2003. *Specimin Label-SPIKE 20P. DOW AgroSciences LLC.*

Tingley, Joseph V.

1998 *Mining Districts of Nevada.* Second edition. Nevada Bureau of Mines and Geology Report 47. MacKay School of Mines, University of Nevada, Reno.

United States Department of Agriculture
2006a Hydrologic Unit Coverage 5. Current GIS layer. Natural Resources Conservation Service.

9.0 Appendices